COMMENTS ON THE PETITION CONCERNING PENEID NAMES (CRUSTACEA DECAPODA) (Z.N.(S.) 962)

(see vol. 19 pages 103–114)

By Martin D. Burkenroad (*Museo Nacional de Panamá*)

1. It is gratifying to find agreement that uniform spelling of names derived from Latin Peneus and Aristaeus is desirable (Holthuis, 1962, *Bull. zool. Nom.* **19**(2) : 103–5). However, the proposal to spell all taxonomic names derived from Peneus with *aeus*, and all derived from Aristaeus with *eus*, seems still rather confusing. Accordingly, I would prefer to spell all of both sets of names in the simplest way, with *eus*.

As noted by Holthuis, " *Penaeus* Fabricius is already placed on the Official List in that spelling " ; but this precedent is difficult for me to accept, for the following reason : The Commission's Direction 15 (*Opinions and Declarations*, 1955 ; 1, C, C5 : 74) states that " The publication of the present application [by Hemming on *Peneus ;* 1952, *Bull. zool. Nom.* **6**: 318–9] elicited no objection to the action proposed in this case ". However, a letter from me objecting to the spelling *aeus* had been received and acknowledged.

Should Direction 15 be reconsidered by the Commission, it would be feasible to separate the question whether Weber's prior *Peneus* is a nomen nudum, from the question whether the subsequent Fabrician spelling *Penaeus* ought to be preserved. Meanwhile, since no confusion will be caused if anyone wishes to write *Trachypenaeus, Aristaeomorpha*, etc., for what I propose to spell *Trachypeneus, Aristeomorpha*, etc., the rather Laputan orthographic question might perhaps be left to work itself out among practising authorities.

2. Holthuis also recommends (*l.c.:* 105–6, 113–4) that the works of Tilesius (1814, 1818) on marine bioluminescence be rejected for nomenclatural purposes. However, it is not explained why the rule of nomen oblitum (Article 23b of the revised Code) needs reinforcement in this particular case. Under Article 23b, an historically-minded investigator who wished to pay a voluntary respect to the past could apply to the Commission for license to use a Tilesian name, but he would have to show that this use would serve the stability and uniformity of nomenclature (i.e. that a current name would not be displaced). This seems a satisfactory situation ; whereas the accumulation of inadequately indexed nomenclatural directives is a nuisance.

3. The petition under consideration (*l.c.;* pp. 106–7, 111–2) next recommends that the type-species of *Metapeneus* Wood-Mason be changed from *Peneus affinis* H. Milne-Edwards to *P. monoceros* Fabricius, on the grounds that " the name *Metapenaeus* proves not to be available at all for the genus containing *Penaeus monoceros.* As has recently been shown by Hall (1961, *Bull. Raffles Mus.* **26** : 93, 94), the type-specimen of *Penaeus affinis* . . . actually is a specimen of the species best known as *Parapenaeopsis sculptilis* (Heller, 1862) ".

However, Hall seems to have misunderstood Bate's account of the Edwardsian material of *affinis* (1881, *Ann. Mag. nat. Hist.* (5) **8** : 179, fig 6), and to have overlooked the actual type-specimens of this species. Bate describes the material which he saw in Paris as consisting of " several specimens in the same bottle, labelled from Malabar ; and they evidently show that Milne-Edwards drew up his description from a female, with which it coincides . . . ". At the time of my own visit to Paris, in 1938, this bottle contained an adult male and two adult females of a species which has been described under the name *Metapeneus necopinans* by Hall, 1956 (*Bull. Raffles Mus.* **27** : 86 ; synonymized with *Peneus mutatus* Lanchester by Hall, 1961, *l.c.*), and which was correctly identified as *affinis* by Alcock (1906), Pesta (1913), de Man (1924), Burkenroad (1934), Kubo (1954), etc. (nec " *affinis* " of Kishinouye, 1900 ; de Man, 1911 ; Kubo, 1949 ; Hall, 1956 ; etc.). Bate then goes on to say that

" In a second bottle, labelled ' India ', is a single female specimen that I take to be *P. sculptilis*, Heller ". This specimen (also seen by me in 1938, when, according to my notes, it was labelled " Bombay "), was evidently the only one seen at Paris by Hall (1958, *Ann. Mag. nat. Hist.* (13) **1**(7) : 540 ; and 1961, *l.c.* : 93–4). From its provenance this specimen of *Parapeneopsis* cannot be the type of Milne-Edwards' species, but must have been added to the collection after publication of the original description of *affinis* as from " la côte de Malabar ".

Peneus monoceros Fabricius is not even generically determinable from the original description, and its usage is much confused. A neotype has been designated for it by Hall, 1958 (*l.c.:* 544), but seems invalid under Article 75(c)5 of the revised Code (since the locality from which it came is not given) ; and Hall's definition of the species seems questionable according to the variations among Indian material which I have examined (compare also Hall's 1956 account of the forms of "*monoceros*" found at Singapore, *l.c.:* 77–8, fig. 11).

Thus, the petition in effect recommends the replacement of a well-defined type-species by a nomen dubium.

4. The petition (*l.c.:* 106-7, 111–2) also recommends suppression of the name *Mangalura* Miers, in order to avoid replacement by it of the junior genus-group name *Metapeneus* Wood-Mason, which is said to have been " used in Burkenroad's sense in all modern papers . . . ". However, this seems too sweeping an assertion. For example, Holthuis himself, 1959 (*Proc. Kon. Nederl. Ak. Wet.* **52**(9) : 3), did not accept Burkenroad (1934) ; he says that *Peneus monoceros* Fabricius " is considered to form part of the genus *Penaeopsis* Bate ". Again, Kubo (1949, *J. Tokyo Coll. Fish.* **36**(1) : 321, 355, 359) says that the " modern " use of *Metapeneus* dates from his post-war paper (he claims that Burkenroad confused *Metapeneus* with *Peneopsis* and referred to its species under the latter name). Still again, Burkenroad, 1959 (*Res. Sci. Miss. Dollfus en Egypte,* **25** : 86) points out that " . . . consequently *Mangalura* must replace *Metapeneus* " (a statement which might not qualify as " modern " having been submitted for publication before the war and lost in Egypt for twenty years, but which does save *Mangalura* from being a nomen oblitum).

Actually, the classification as well as the nomenclature of the species of this group has by now become so confused that a change in the generic name adds relatively little to the burden of fishery biologists (with whom, as one of them, I fully sympathize). Further, the taxonomic effect of the priority of *Mangalura* will not be entirely what the petition foresees (" the well-known name *Metapenaeus* . . . will entirely disappear and be replaced by the totally unfamiliar name *Mangalura* "). A review of the genus (now nearing completion) has revealed that it is quite clearly divisible into two series or subgenera, one including the type-species of *Metapeneus*, the other that of *Mangalura.* Consequently, *Metapeneus* will merely be restricted to a still smaller taxon than was assigned to it during my revision of " *Penaeopsis* " in 1934. The subdivision of the old genus *Peneus* has not yet quite reached a level justifying the use of *Metapeneus* independently of *Mangalura ;* otherwise the seniority of the latter subgenus would be unimportant.

To use the plenary powers to suppress a name for which a new one would have to be coined (which is, in effect, what the petition proposes for *Mangalura*) seems a precedent to be avoided until other possible alternatives have been exhausted. Could *Mangalura* be declared legally junior to *Metapeneus ?* Or could ordinary technical grounds be found for invalidating it (such as I have not sought very tenaciously, because of disinclination to replace the name of so worthy a pioneer as Miers) ? If there is no practicable alternative to suppression by plenary action, the reasons for requesting the action should certainly be evalued with care ; and I would propose, as standards for gauging the relative strength of the argument for rejecting *Mangalura,* some of Dr. Holthuis's own previous contributions to Peneid nomenclature.

As a standard example, then (although an invidiously selected one ; and I must mention my appreciative agreement with Dr. Holthuis on, e.g., *Peneus setiferus*), the unfamiliar trivial name *Peneus kerathurus* (Forskål, 1775) has been introduced for a well-known fishery animal of the Eastern Atlantic and Mediterranean by Holthuis, 1947 (*Zool. Med.* **27** : 312 ; see also 1961, *Zool. Verh.* **47** : 4). The reasons given for using *kerathurus* instead of requesting its rejection are, that it is " the correct name ", and that there " is no reason not to use the name . . for this species as at present there is no uniformity in the use of a name for it . . . ". The latter statement seems to me misleading, since by 1947 one of the two familiar names for this species, *P. trisulcatus* Leach, 1815, had about completed its gradual displacement of the other, *P. caramote* Risso, 1816 (the latter, introduced long before Linnaeus by Rondelet, having been sustained during the 19th century by H. Milne-Edwards' account of it as distinct from *trisulcatus* and senior to *kerathurus*).

Again, Holthuis, 1949 (*l.c.:* 2, 5–6) has proposed to apply the name *Peneus monodon* Fabricius (indeterminable as described) to an important fishery species generally known for nearly forty years before as *P. carinatus* Dana ; with the comment that " It is the object of the present paper to establish the correct names of the two species involved and to be in this way of some help to those who study the prawn fisheries of the indo-west pacific area . . . The restoration of the name *monodon* for Alcock's *Penaeus semisulcatus* probably will cause as little confusion as the substitution of the name *semisulcatus* for his *monodon* did . . . I am convinced that the only correct thing to do is to give the name *Penaeus monodon* Fabr. to the species indicated with the name *Penaeus carinatus* by deMan (1911), Kemp (1915) and many subsequent authors ". To clear the way for this confusing reversal of usage, Holthuis pointed out that Dana's *carinatus* is a junior primary homonym of *Peneus carinatus* Otto (1822) ; but this latter name has apparently never been mentioned since its publication except in Sherborn and (without identification) by Holthuis, and it seems much more suitable for suppression than for use.(1)

Thus, according to standards derived from the work of Holthuis himself, the reasons advanced for rejection of *Mangalura* seem weak.

5. Finally, the petition (*l.c.:* 107–111) recommends a number of generic and trivial names of Peneids for the Official List. However, the summary presentation of these names provides no hint that some of them at least are controversial in other ways than the orthographic one already treated in section 1 above. Analyses of three selected examples are offered herewith, as follows :

(a) " *Metapenaeopsis miersi* " (Holthuis, 1952) is stated in the petition to be the valid name of the type-species of this genus-group taxon, on the grounds that " *Metapenaeopsis pubescens* " Bouvier (1905) was " rejected as a junior secondary homonym of *Penaeus pubescens* Stimpson, 1871, . . . by Holthuis, 1952 . . . and replaced by the name *Penaeopsis miersi* Holthuis . . . ". However, Holthuis has nowhere stated that he himself regards Stimpson's and Bouvier's species as distinct but congeneric, and in his 1952 paper only says (erroneously) that Burkenroad (1934) thinks them so ; which seems to invalidate his action.

In 1950, the Commission ruled that after " midnight G.M.T. . . . 31st December, 1950 . . . where . . . an author rejects a specific trivial name on the grounds that it is

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(1) To give force to this value-judgement, Otto's *carinatus* is called to the Commission's attention herewith as a nomen oblitum which is a synonym of the well-known current name *Parapeneus longirostris* (Lucas, 1849) as well as a homonym of *Peneus carinatus* Dana (1852), and which thus ought for the sake of stability to be completely rejected under Article 23(b) of the revised Code.

In order to complete his replacement of *carinatus* Dana by *monodon* Fabricius, Holthuis designated a Javanese specimen of the former as neotype of the latter ; but this seems invalid under Article 75(c)5 of the revised Code (since it is improbable that the Fabrician material was obtained from further east " in Oceano Indico " than the terminus of Daldorff's voyage to his station at Tranquebar on the Coromandel coast of India ; *cf.* Holthuis and Gottlieb, 1958, *Bull. Res. Counc. Israel* 7B, 1–2 : 20).

The way is therefore now open for restoration of the status quo ; and it may be pointed out that *monodon* can be put into currency without overturning the customary usage of *semisulcatus* or *carinatus*, by applying it to the Arabian Sea subspecies of the species called *monodon* by H. Milne-Edwards, 1837 (*cf.* Burkenroad, 1959, *l.c.* : 75–9).

. . . the later published of a pair of secondary homonyms, that rejection is to be accepted as valid only if the author in question makes it clear . . . that he regards as congeneric the two species bearing identical specific names . . . " (*Bull. zool. Nom.* **4**(4/6) : 121). The statement of rejection by Holthuis (1952) is as follows : " H. Balss . . . identifia comme une seule espèce les formes de E. L. Bouvier et de W. Stimpson et leur donna le nom de *Penaeopsis pubescens* (Stimpson). Dans une revision du genre *Penaeopsis,* M. D. Burkenroad . . . arrive à la conclusion que *Penaeopsis pubescens* (Bouvier) et *Penaeopsis pubescens* (Stimpson) sont des espèces différentes et que la détermination de la dernière espèce n'est pas certaine. Il est donc claire que le plus recent des deux noms . . . doit être supprimé ".⁽²⁾

Inasmuch as the rejection of Bouvier's *pubescens* by Holthuis (1952) was invalid under the rules then in force, his *miersi* cannot under Article 59(c) of the present Code now be accepted as the name of the type-species unless *Peneopsis* (*Metapeneopsis*) *pubescens* (Bouvier) and *Parapeneopsis* (?) *pubescens* (Stimpson) are believed to be congeners, a question which he has not discussed.

(b) *Benthesicymus crenatus* Bate, is stated in the petition to be the " type-species, by selection by Bate, 1888 . . . ". However, Bate seems in fact to have lacked the type-concept and to have used the word merely in the sense of *representative.* The actual designator of *crenatus* seems, under the Code, to have been the ichthyologist Fowler (1912, *Ann. Rept. N.J. State Mus.* **1911**(2) : 544) who, not being familiar with Bate's usages, made the erroneous but effective statement " Type *Benthesicymus crenatus* Bate, first species, designated by Bate, Rep. Voy. Challenger, Macr. LII, 1888, p. 320 ".

In the cited passage, Bate (*l.c.:* 320) says that certain features of *Hepomadus* " correspond with those in *Hemipenaeus tomentosus* more than with those in either *Aristaeus armatus* or *Benthesicymus crenatus,* the types of their respective genera ". However, he had already referred in the same publication (pp. 307, 311) to " *Hemipenaeus semidentatus* . . . the typical species ", and to " *Penaeus antennatus,* Risso, the type of Duvernoy's genus " *Aristeus.* Therefore, in the case of the *Benthesicymus* as well as the *Hemipeneus* and the *Aristeus* on p. 320, it is not " clear that he himself accepts it as the type-species " (Article 69(a)iii of the revised Code).

This point is of some importance because Bate's loose employment of the word " type " might be used to create nomenclatural confusion in other cases, if the precedent recommended in the petition were to be accepted.

(c) " *Penaeopsis serratus* Bate, 1881 . . . 183 " is stated in the petition to be the valid name of the type-species of this genus. However, since the time of the revision of Burkenroad, 1934 (*l.c.:* 12–15), this name (which, according to Article 51c of the revised Code, should evidently be cited as " *P. serratus* A. Milne-Edwards in Bate ") has been generally regarded as a junior secondary homonym of *Peneopsis serratus* (Bate, 1881, *l.c.:* 182), and the valid name of the type-species as *Peneopsis megalops* (Smith, 1886).

In personal communications from Dr. Holthuis concerning his petition (which have indebted me to him for many shrewd and interesting points helpful in clarifying the present issues), it is noted that the current use of *megalops* can be questioned under the rule of the first reviser, since deMan (1911) considered Bate's *Peneus serratus* to be the junior of the pair of homonyms. However, my view of the legal situation is that, " rigidly construed ", Burkenroad (1934) is the " first reviser " in the sense of the Code. The history of the situation is as follows :

⁽²⁾ Actually, Burkenroad, 1934 (*Bull. Bingham Oc. Coll.* **4**(7) : 15–17) nowhere used the combination " *Penaeopsis pubescens* (Stimpson) ", and concluded that this species must have been a *Parapeneopsis.* His remarks are as follows : " Stimpson's statements . . . that the leg bases of this species are unarmed and . . . the telson bears only one pair of lateral spines . . . fail to agree with what is very conspicuously the state of all known species of *Penaeopsis.* The only other genus to which the remainder of the description might apply seems to be *Parapenaeopsis* . . . [It is] possible that a since-undiscovered species of *Parapenaeopsis* from which Stimpson's description was drawn exists in the Western Atlantic. Therefore . . . the West African species of *Penaeopsis* may be known as *P. pubescens* (Bouvier) ".

In 1909, Bouvier (with A. Milne-Edwards as nominal senior author, *Mem. M.C.Z. Harvard* **27**(3) : 221) identified a species which had been well-described by Smith (1886) under the name *Parapeneus megalops*, as the " *Penaeopsis serratus*, A. Milne-Edwards, MS " which had been published without adequate description by Bate (1881) in comparison with his own " *Penaeus serratus*, n.sp.". There are a number of reasons for doubting that *megalops* was actually the species to which Bate had referred (or the one labelled " *Penaeopsis serratus* " at the time of Bate's visit to A. Milne-Edwards in 1881) ; but, on the basis of Bouvier's seemingly authoritative identification, the generic name *Peneopsis* has subsequently been used for the Peneine genus to which *megalops* (Smith) belongs, rather than (as by Faxon, 1895) for the Solenocerine genus to which *Hymenopeneus robustus* Smith belongs.

Bouvier seems to have believed that *Peneus serratus* Bate had not been described until 1888, seven years after the description of *Peneopsis serratus* A. Milne-Edwards in Bate ; and he regarded the former as " sans doute " a junior synonym of the latter. He also pointed out that if the two were not identical, their names would be homonymous ; but did not directly designate Bate's name as the junior homonym.(3)

In 1911, deMan concluded that Bate's *serratus* was distinct from Milne-Edwards's, but seems to have copied Bouvier's references without checking them, and so failed to realize that the case was one of simultaneous publication. On pp. 8–9 (*l.c.*) deMan gives the dates of Bate's and Milne-Edwards's *serratus* as respectively 1888 and 1881; and on p. 79 he says, " *Penaeopsis Challengeri* n.nom. Syn.: *Penaeus serratus* C. Spence Bate, Report Challenger Macrura, 1888, p. 268, Pl. XXXVII, Fig. 1 (nec *Penaeopsis serratus* A. Milne-Edwards) ".

As to whether deMan established that Bate's *serratus* is a junior homonym of Milne-Edwards's, Article 35 of the old Code says only that " the more recent specific . . . name is to be rejected as a homonym ". It does not say how relative priority is to be established, and an author's mistake about date of publication of a name would seem a poor reason to license him to deal out the permanent rejection which was prescribed for junior secondary homonyms under the old Code. Article 24 of the 1961 Code specifies that priority between simultaneously-published names is to be established by the first reviser, but seems to require an author to recognize the fact of simultaneous publication in order to qualify as a first reviser ; which would exclude Bouvier and deMan.(4)

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(3) Bouvier's words (1909, *l.c.*: 225) are : " Quant au *Penaeus serratus* décrit et figuré par Spence Bate (1888, p. 268, Pl.XXXVII, Fig. 1) il ressemble beaucoup au *Penaeopsis serratus* et devrait sans doute être identifié avec lui . . Mais les figures de Spence Bate ne sont pas très claires et peut-être y aura-t-il lieu de revenir sur cette question ; en tout cas, il semble bien que le *Penaeus serratus* de cet auteur soit un *Penaeopsis* dont le nom fait double emploi avec celui proposé par A. Milne-Edwards ". The latter, contingent statement, that homonymy rather than synonymy might later be found to exist, could not be expected to specify which of the two simultaneously-published names is prior ; since Bouvier was evidently unaware that they were published simultaneously and since, believing them to be synonyms, he did not propose a new name for one of the pair.

(4) Article 24 reads as follows : " If . . . identical names for different taxa . . . are published simultaneously . . . their relative priority is determined by the action of the first reviser . . . The expression ' first reviser ' is to be rigidly construed. In the case of synonyms, an author must have cited two or more such names . . . Recommendation 24A . . . In acting as ' first reviser ' in the meaning of this Section, a zoologist should select the name . . . that has precedence of position in the work in question ". This somewhat ambiguously-worded Article does not specify what an author must do to qualify as " first reviser " in the case of homonyms rather than synonyms ; and even in the case of synonyms it does not specify that the author must have cited " such names " as simultaneously published ; but the intent of the Article seems to be established by the Recommendation. An author who, like Bouvier or deMan, has cited the synonymous or homonymous names as having different dates, when they had in fact been simultaneously published, would obviously not be able to comply with the Recommendation to select the name that has priority of position; therefore, such an author would evidently not have been " acting as ' first reviser ' in the meaning of this Section ".

In 1934, Burkenroad revised the catch-all " *Penaeopsis* " of deMan, with as little disturbance of current nomenclature as the circumstances permitted. The identity of Bate's " *serratus*, A. Milne-Edwards, MS " was not questioned ; but instead this question was swept under the carpet by removing this name from currency as a junior secondary homonym of *serratus* Bate. As long as *Peneopsis* (*Peneopsis*) *megalops* (Smith) continues to be accepted as the valid name of the type-species, the question of the true identity of Milne-Edwards's *serratus* need not, in practise, be raised (and will therefore not be discussed here, except to say that it is complicated and difficult). If, however, the legal considerations advanced above are not so conclusively in favor of current usage as I think, it should be noted that Holthuis's recommendation to place *serratus* A. Milne-Edwards in Bate on the Official List still seems unacceptable, because it names but does not clearly identify the type-species of *Peneopsis*.

To summarize section 5, it is uncertain how many of the petition's recommendations for the Official List may include undesirable or, at least, controversial features ; and decision should perhaps await the publication of more extensive individual accounts of all these names.

6. The foregoing technical commentary is framed in the same terms as the petition. From a broader point of view also, the question can be raised whether adoption of the proposals in the petition would eliminate more instability and inconvenience than they would generate ; *cf*. Parr, 1939 (*Trans. N.Y. Acad. Sci.* (2) 2(2) : 4), "Taxonomy has fallen rather miserably short of this purpose, largely due to the fact that it has substituted for common sense a rigid system of legalistic rules of procedure . . ".

Professor Parr does not seem to have published more than peripheral fragments of the prescription for the ills of taxonomy to which he introduced me some thirty years ago, a central concept of which was the designation of new starting-points for nomenclature, to supplement the Linnean monograph, whenever suitable accounts of the classification of a group become available. A discussion of this idea, which has many attractive implications, cannot be attempted in the present place ; but I wish to state my conviction that new operating concepts will be required for satisfactory solution of problems such as are treated in Dr. Holthuis's petition.

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I have previously commented (Gunter, in press) that Dr. Holthuis's (*Zoologischer Verhandelinger* 44 : 1–192, 16 pls. 1959) usage of the root word *Penaeus* for all genera of the Penaeidae is not in conformity with the Code. As stated in his proposal, I defended the maintenance of *Penaeus* and *Peneus* as the original describers wrote them. However, his argument for uniformity is rather convincing. His own adoption of the uniformity before the Commission has acted on the case is more convincing still. Other authors are going to do the same thing. Therefore, I withdraw my arguments for continued use of *Penaeus* and *Peneus* as root words and join Dr. Holthuis in his request for uniform spelling.

F. Weber (*Nomenclator entomologicus secundum Entomologiam systematicam*, etc. VIII + 171 pp. Chilonii et Hamburgi. Bohn, 1795) did use *Peneus*, but he described no species and his names are all *nomina nuda*. Therefore, for purposes of zoological nomenclature, the name starts with Fabricius in 1798 and for unstated reasons he used *Penaeus*. Nearly all authors have used that spelling. It would cause a great overturn now to substitute *Peneus*. Therefore, I advocate the adoption of paragraph 5 on page 111 of the subsidiary parts of Dr. Holthuis's request, chiefly (1), as outlined.

Concerning the other parts of Dr. Holthuis's request for action on penaeid names I have no knowledge and no authority. They do seem to be well thought out and well presented.